

ABSTRACTS

This section of the JOURNAL is published in collaboration with the two abstracting Journals, ABSTRACTS OF WORLD MEDICINE and OPHTHALMIC LITERATURE, published by the British Medical Association. The abstracts are divided into the following sections: Syphilis (Clinical, Therapy, Serology, Pathology, Experimental), Gonorrhoea, Non-Gonococcal Urethritis and Allied Conditions, Chemotherapy, Public Health and Social Aspects, Miscellaneous. After each subsection of abstracts follows a list of articles that have been noted but not abstracted. All subsections will not necessarily be represented in each issue.

SYPHILIS (Clinical)

Follow-up Studies in Cardiovascular Syphilis. KALZ, F., and SCOTT, A. I. (1955). *Canad. med. Ass. J.*, 72, 274. 5 refs.

The authors, believing that "detailed studies of the life expectancy and the general prognosis of adequately treated patients should be of practical value", report their findings in 111 cases of cardiovascular syphilis treated before 1948 and followed up at the Royal Victoria Hospital, Montreal. Only two cases were lost to observation, 84 were observed for at least 5 years, 53 for 10 years, and 25 for 15 years. Altogether there were 46 deaths, by no means all attributable to syphilis. The frequency and causes of death are tabulated and discussed. The authors consider the following classification of cases of cardiovascular syphilis to be useful:

- (1) Uncomplicated aortitis;
- (2) Aortitis complicated by simple aortic insufficiency but without signs of coronary disease or congestive failure;
- (3) Aortitis complicated by coronary involvement (with or without aortic insufficiency);
- (4) Cardiovascular syphilis, with congestive failure;
- (5) Saccular aneurysm.

They find that with appropriate treatment Groups 1 and 2 have a favourable prognosis; in Groups 3 and 4 the prognosis is unfavourable regardless of the therapy given; while that in Group 5 depends on the degree of pathological change and the state of the coronary circulation. Over 30 per cent. of the saccular aneurysms met with terminated in rupture. The main conclusion of this study, therefore, is that prognosis depends on the presence or absence of either coronary arterial involvement or congestive failure.

The authors have omitted any details of sex, race, or age distribution, since it was impossible to establish any relative correlations in this small series.

Douglas J. Campbell

Pre-Columbian Osseous Syphilis. Skeletal Remains Found at Kinishba and Vandal Cave, Arizona, with Some Comments on Pertinent Literature. COLE, H. N., HARKIN, J. C., KRAUS, B. S., and MORITZ, A. R. (1955). *Arch. Derm. (Chicago)*, 71, 231. 5 figs, 10 refs.

During an examination of 57 more or less complete skeletons found in Kinishba in the White Mountains and, in one instance, in Vandal Cave, Arizona, two examples of what the authors believed to be osseous

syphilis were discovered. In one instance the appearances were those of diffuse gummatous osteoperiostitis of one tibia. In portions of the skull from the same skeleton there was evidence of periosteal thickening, but the changes were not considered to be pathognomonic of syphilis. The tibia of another skeleton showed what appeared to be the classic sabre-shin deformity of congenital syphilis. Examination of roof beams in the village, or pueblo, at Kinishba indicated that its 700 rooms were built in the 13th century. Evidence at Vandal Cave suggested that it was inhabited at a similar time and also earlier, probably in the 7th century. The authors consider these findings to indicate that syphilis was present in North America before the coming of Columbus. They discuss some evidence from the literature relating to the antiquity of syphilis in America, Europe, and Asia.

A. J. King

Syphilis and Arteriosclerosis in Patients with Coronary Arterial Disease. (Lue ed arteriosclerosi nei coronaropatici.) INVERNIZZI, G. (1955). *Settim. med.*, 43, 115. 1 fig., 19 refs.

Gastric Syphilis. Observations on a Case of Syphilis of the Stomach Simulating a Neoplasm. (Un tema di sifilide gastrica. Osservazioni su di un caso clinico di sifilide neoplastiforme dello stomaco.) Pozzo, G., and MENEGHINI, C. L. (1955). *G. ital. Derm. Sif.*, 96, 170. 2 figs, 13 refs.

Pulmonary Tuberculosis and Syphilis. (Tuberculosis pulmonar y sifilis.) SANTA-MARÍA, F. E., CABO REY, L. A., and REY MARTINEZ, M. (1955). *Med. clin. (Barcelona)*, 24, 178.

SYPHILIS (Therapy)

Penicillin Treatment for Early Congenital Syphilis. SMITH, C. A., GLEESON, G. A., and JENKINS, K. H. (1955). *Arch. Pediat.*, 72, 12. 2 figs, 4 refs.

The records of 472 cases of early congenital syphilis treated with penicillin alone during the period 1946-50 have been collected and studied at the U.S. Public Health Service, Washington, D.C. Cases in infants under 3 months of age were included only when obvious clinical signs of infection were present in addition to a positive reaction to serological testing. Approximately 40 per cent. of the 472 patients had been followed up for 18 to 21 months; the authors appreciate that this period is far too short to provide any information regarding the

adequacy of penicillin treatment in preventing the development of late clinical manifestations of congenital syphilis.

During the follow-up period ten cases were classified as clinical or serological failures, though four of these received re-treatment on a "clinician's decision", which on later review seems to have been unjustified. Nevertheless, two patients had re-treatment for serum resistance, two for clinical relapse, and one for serological relapse. In all 56 patients whose cerebrospinal fluid was examined in the post-treatment period normal results were obtained.

The authors conclude that in early congenital syphilis the pattern of serological behaviour after treatment is analogous to that in the early stages of acquired disease; also that when aqueous crystalline penicillin is used best results are obtained with a dosage of 321,000 units or more per kg. body weight. A few of the patients were treated with penicillin in oil and beeswax with equally successful results.

G. L. M. McElligott

Treatment of Early Syphilis. Results with Penicillin G Procaine and 2 per cent. Aluminium Monostearate.

CUTLER, J. C., OLANSKY, S., and PRICE, E. V. (1955). *Arch. Derm. (Chicago)*, **71**, 239. 1 fig., 5 refs.

Procaine benzylpenicillin in oil with 2 per cent. aluminium monostearate (PAM) has been used extensively in the treatment of syphilis, and in this paper results obtained at five treatment centres of the United States Public Health Service are reviewed, the observation period being 1 to 2 years. In the sero-negative primary stage of the disease there was no obvious relationship between results and the dosage of PAM, as little as 300,000 units being effective. Of the patients in this group requiring further treatment, more than 60 per cent. were believed to have been re-infected, and the authors state that patients in the sero-negative primary stage are particularly liable to re-infection because they have developed the least immunity. In the sero-positive primary stage little advantage was gained by increasing the total dosage beyond 2,400,000 units, the re-infection rate being 12.7 per cent.; with a total dosage of 1,200,000 units 23 per cent. of patients required re-treatment.

In the secondary stage the best results were obtained with the highest dosage used, namely, 9,600,000 units, the re-infection rate being 7 per cent. In one centre where dosage was computed by body weight the most satisfactory results in the secondary stage of the disease (82 per cent. of cases) were obtained with the highest dosage, namely, 80,000 units per kg. body weight, but the results with 40,000 units per kg. were nearly as good (78 per cent.). With 20,000 units per kg. the percentage of successful results was 72, but with 10,000 per kg. there was an abrupt fall to 44. At another centre three schemes of treatment were employed:

- (1) 1,200,000 units in one injection;
- (2) two injections each of 1,200,000 units with 7 days' interval between the injections;
- (3) 4 injections each of 1,200,000 units at intervals of 7 days.

The percentages of successful results were 75.1, 83.1, and 91.6 respectively. At yet another centre the practice was to give a single injection of 2,400,000 units or two injections each of the same amount [with presumably 7 days' interval]. Treatment was successful in 94.6 per cent. and 91.8 per cent. of cases respectively, indicating that no advantage was to be gained by giving two injections of this amount. With 600,000 units twice a week for 8 weeks successful results were obtained in 93.8 per cent. of cases.

The only advantage of prolonging treatment beyond one or two injections appeared to be that the patient was in touch with the personnel of the treatment centre for a longer time, facilitating the tracing of contacts. This was important from the public health point of view, and a scheme of treatment was therefore devised in which an initial injection of 2,400,000 units of PAM was followed by two injections each of 1,200,000 units at intervals of 2 to 4 days. This ensured at least three visits to the clinic or, if the patient defaulted, the initial or "insurance" dose rendered the patient non-infectious and afforded an excellent chance of cure.

A. J. King

Preliminary Report on the Effect of Carbomycin in Early Syphilis. BUCKINGER, R. H., HOOKINGS, C. E., and GARSON, W. (1955). *Antibiot. Med.*, **1**, 100. 2 figs, 1 ref.

A recent report (Turner and Schaeffer, *Amer. J. Syph.*, 1954, **38**, 8; *Abstr. Wld Med.*, 1954, **16**, 199) having shown that carbomycin, an antibiotic derived from *Streptomyces halstedii*, was "rather effective" at low serum levels in experimental syphilis in rabbits, a clinical trial of this antibiotic was undertaken at the Venereal Disease Clinic, Memphis, Tennessee.

A daily dose of 2 or 3 g. carbomycin was given by mouth to eleven patients with dark-field positive primary or secondary syphilis. *Treponema pallidum* disappeared from the lesions in 36 to 72 hrs after the initial dose. Slight side-effects were observed in only two cases.

[This is a preliminary report of a rather inconclusive clinical trial, but it indicates that carbomycin has some effect on *T. pallidum* and that in the dosage employed it is relatively free from side-effects. Longer observation of the patients and laboratory tests to determine the blood level of the antibiotic and serological results of treatment will be necessary before the value of carbomycin in the treatment of syphilis can be assessed.]

Robert Lees

Treatment of Cardiovascular Syphilis. (Die Behandlung der kardiovaskulären Lues.) SCHEMBRA, F. W. (1955). *Münch. med. Wschr.*, **97**, 922. 20 refs.

"Iodocillin" in the Treatment of Neurosyphilis. (Sull'uso della iodocillina nella neurologia.) FLORIS, V., and SEVERINI, P. (1955). *Minerva med. (Torino)*, **1**, 1317.

Question of Penicillin Treatment in Neurosyphilis. II. Special Therapeutic Problems. (La questione della terapia penicillinica nella neurologia. II. Problemi di terapia speciale.) CALLIERI, B. (1955). *Clin. terap. (Roma)*, **8**, 253. 7 figs, bibl.

Treatment of Syphilis with Long Acting Penicillin.

(Tratamiento de la sífilis con penicilinas retardadas.) GAY PRIETO, J., LOPEZ VILLAFUERTE, A., PASCUAL SANTAMERA, A., and ORUSCO HERNANDO, M. (1955). *Act. dermo-sifilogr. (Madr.)*, **46**, 555.

Treatment of Syphilis with Procaine Penicillin.

(Sobre el tratamiento de la sífilis por los preparados de penicilina-procaína.) LOPEZ, B., and RODRIGUEZ MORALES, J. (1955). *Act. dermo-sifilogr. (Madr.)*, **46**, 562.

Cortisone and Sero-resistance.

(Cortisone e sieroresistenza.) DEPAOLI, M., and DOGLIOTTI, M. (1955). *Minerva derm. (Torino)*, **30**, 89. 37 refs.

On the Frequency of the Jarisch-Herxheimer Reaction.

[In English.] BLOM-IDES, C. S. A. M., POLANO, M. K., and HERRMANN, W. A. (1955). *Acta derm.-venereol. (Stockh.)*, **35**, 118. 4 refs.

Observations on Focal Syphilis ("Island Disease") with Special Reference to the Use of Luotest, Mirion, and Kobratoxin.

OUTSCHOORN, A. S. (1954). *Ceylon med. J.*, **2**, 238. 17 refs.

SYPHILIS (Serology)**Study of the TPI Test in Clinical Syphilis. II. Comparison with the VDRL Slide Test in Treated Early Symptomatic Syphilis.**

EDMUNDSON, W. F., KAMP, M., and OLANSKY, S. (1955). *Arch. Derm. (Chicago)*, **71**, 384. 7 refs.

This report from the Venereal Disease Research Laboratory, Chamblee, Georgia, presents the results of a comparative study of the treponemal immobilization (TPI) and VDRL slide tests, which were carried out in parallel on sera from 188 patients at varying periods after adequate treatment with penicillin for early syphilis. The TPI test was not performed before treatment, nor were serial tests carried out.

In 77 cases the patient had been treated for primary syphilis 3 months to 4 years or more before the tests were performed. Sera from only two patients (treated respectively 3 months and 1 year previously) were reactive with the VDRL test, whereas seven sera were reactive with the TPI test ("reactive" including both positive and doubtful reactions). The interval since treatment was 3 months in three of these seven cases, 1 year in one, 2 years in another, and 4 years in the remaining two cases. In one case the serum was reactive with the VDRL test a year after treatment, but gave a negative TPI reaction.

The tests were also carried out on sera from 111 patients who had been treated for secondary syphilis, these being reactive with the VDRL test in 33 cases and with the TPI test in 51. In about half the cases tested 3 months after treatment the serum was reactive with the TPI test, but this proportion fell to one-quarter in the cases which were not tested until 4 or more years after treatment. The VDRL reaction had become negative 1 year after treatment in all but a few cases (7.4 per cent.), in five of which the TPI reaction was negative.

This lack of correlation between the results of the two tests emphasizes the need for careful questioning of the patient about previous antisyphilitic treatment before attempting to interpret the result of either test in this type of case.

A. E. Wilkinson

Study of the TPI Test in Clinical Syphilis. III. Late Syphilis.

EDMUNDSON, W. F., OLANSKY, S., WOOD, C. E., and KAMP, M. (1955). *Arch. Derm. (Chicago)*, **71**, 387. 9 refs.

A comparative study of the reactivity of sera from 120 patients with late syphilis with the quantitative Kahn test, the quantitative Kolmer test using cardiolipin antigen, the VDRL slide test, and the treponemal immobilization (TPI) test was carried out at the Venereal Disease Research Laboratory, Chamblee, Georgia. Both treated and untreated patients were included and the cerebrospinal fluid had been examined in all cases. Symptomatic neurosyphilis of various types was present in 57 cases, asymptomatic neurosyphilis in 44, cardiovascular syphilis in fifteen, and gummata in four (of the naso-oral cavity in three, of the liver in one); eighty of the patients had been treated in the past.

The Kahn test gave a positive or doubtful ("reactive") result in 64.9 per cent., the Kolmer test in 85.4 per cent., the VDRL test in 78.6 per cent., and the TPI test in 98.3 per cent. of the 120 patients. The only two patients in whom the TPI reaction was negative were a man of 67 who had been adequately treated for early paresis in 1928 with arsphenamine and malaria, his serum having also given negative results in 1948, and a woman of 55 who had had a gumma of the palate which had been adequately treated with penicillin in 1951.

The authors consider that because of its high reactivity in late syphilis, the TPI test may be helpful in the investigation of patients who have signs arousing suspicions of late syphilis which are not corroborated by the results of standard serum tests. This is especially likely to occur in patients with tabes and cardiovascular syphilis.

A. E. Wilkinson

Test for Immobilization of *Treponema pallidum*. Correlation with Some of the Standard Serologic Tests for Syphilis.

MACPHERSON, D. J., LEDBETTER, R. K., and MARTENS, V. E. (1955). *Amer. J. clin. Path.*, **25**, 89. 18 refs.

Treponemal immobilization (TPI) tests were performed at the National Naval Medical Center, Bethesda, Maryland, on serum from 726 patients on whom standard tests for syphilis (STS) had given positive or doubtful results on two or more occasions and who had no clinical evidence or past history of syphilis. In all cases two separate specimens of serum were examined by the TPI test. [It is not stated whether there was any disagreement between the results of tests on the two specimens.]

The TPI test result was positive in 437 cases and negative in 289, an incidence of 39.8 per cent. non-specific STS reactions. The Kahn reaction had originally been found positive in 621 cases, and 248 (39.9 per cent.) were TPI-negative. The Kolmer reaction was positive

in 126 cases, but the TPI reaction was negative in 27 (21.4 per cent.) of these. A test with cardiolipin antigen [nature not stated] had given 163 positive reactions, but serum from 48 of these patients gave a negative TPI reaction.

A possible cause of non-specific STS reactions was present in only sixty of the 289 patients who were thought to have given such reactions in view of the negative TPI result. These included cases of upper respiratory tract infection (eighteen), malaria (nine), infectious mononucleosis (six), pneumonia (six), virus pneumonia (four), and pregnancy (seven cases).

[These results emphasize the high proportion of cases in which no precipitating cause can be assigned for presumed non-specific STS reactions.]

A. E. Wilkinson

Quantitative Analysis of the Sachs-Witebsky Reaction on 1,146 Sera. (Analisi quantitativa di 1146 sieri con la reazione di Sachs-Witebsky.) LOMUTO, G. (1955). *G. ital. Derm. Sif.*, 96, 43. Bibl.

Writing from the University Skin Clinic, Bari, the author points out the prognostic and therapeutic importance of a quantitative serological follow-up of syphilitic patients.

In the study here described 1,146 sera from 802 patients were examined by the Sachs-Witebsky (S-W) reaction for lipid flocculating antibody and 24 hours later the quantitative reaction of the positive sera was determined. The technique used is briefly outlined. The same pipette was used for all tests, and re-inactivation of the serum for the quantitative test is not necessary. It was unfortunately not possible to shorten or simplify the quantitative reaction to such an extent as to render it practicable for routine application in place of the qualitative test.

The most salient findings in the study were as follows. Repetition of the test after 24 hrs often shows a change in titre; in 17 per cent. of the present cases a decrease and in 3 per cent. an increase in titre occurred. The level of antibody is related to the stage of syphilis and may be negative or positive at a titre of no more than one in four in primary cases, and is never below one in four in secondary cases; in clinically manifest cases of tertiary syphilis it is usually lower than in secondary. In untreated congenital cases the titre is usually high and a zone phenomenon often occurs; this phenomenon, which the author defines as a stronger reaction at a higher dilution, although this does not imply a completely negative reaction in a lower dilution, is considered to be due to excess antibody and was observed in 50 per cent. of all untreated congenital cases in this series, while most other cases with zoning were of long standing.

Performance of the S-W test with twice the normal amount of serum gave an attenuation of the reaction in nine cases (probably due to zoning) but an increase in intensity in 68 cases, six of these which had been negative with a normal amount of serum becoming positive; the procedure is however not recommended. A strongly positive complement-fixation test is usually associated with a positive S-W test result, but the reverse is not true.

As an example of a non-specific reaction, 34 out of sixty samples of serum from patients with leprosy gave positive results, many with a high titre persisting over several dilutions.

The serological reactions in a number of cases were followed through a period of treatment with penicillin or with bismuth and arsphenamine. The titres were inconclusive, but the author inclines to the belief that penicillin lowers the titre less than the older forms of treatment in long-standing cases. In recent cases penicillin is superior.

F. Hillman

Experience with the New Pallida Antigen in Syphilitic Serology. (Erfahrungen mit dem neuen Pallida-Antigen in der Lues-Serologie.) GROPPER, H. (1955). *Medizinische*, No. 10, 352. 5 refs.

The author surveys his experience at the Dermatological Clinic of the University of Tübingen in the use of the "pallida" reaction in 3,521 cases. Whereas the Wassermann reaction (WR) is dependent on the presence of a non-specific anti-lipid antibody, the pallida reaction is due to a specific antibody against spirochaetal protein. A positive reaction was obtained in 641 of the 3,521 cases, and the results are compared with those of the following tests simultaneously carried out: WR with cardiolipin antigen, WR with syphilitic liver, Kahn test, Meinicke reaction (macroscopic and microscopic). With strongly positive sera the pallida reaction gave the highest number of positive results followed by the Meinicke reactions and Kahn test; the highest total number of positive results was given by the Meinicke reactions owing to their higher sensitivity with weakly positive sera. In one clinically diagnosed case of syphilis the pallida reaction was negative whereas the other reactions were positive; on the other hand the pallida reaction alone was positive in 3.1 per cent. of cases.

It was found that the sensitivity of these tests was in inverse proportion to their specificity; thus the original WR and the cardiolipin WR, with relatively low sensitivity, gave more specific results than the more sensitive pallida and Meinicke reactions. False positive results with the pallida reaction may be due to lupus vulgaris. The pallida reaction tends to remain positive even in satisfactorily treated cases, unlike the cardiolipin WR and the original WR, and it therefore cannot be used as a test of cure. In two recent cases of syphilis followed up with all the above tests the pallida reaction was the first to become positive, followed closely by the two Meinicke reactions; owing to the early institution of treatment the ordinary WR never became positive in these cases.

It is noted that Nelson's treponemal immobilization test is superior to the pallida reaction in sensitivity and specificity.

F. Hillman

Specificity of the TPI (*Treponema pallidum* Immobilization) Test in the Diagnosis of Syphilis. (De waarde van de treponema-pallidum-immobilisatie-reactie voor de diagnostiek van syphilis.) BEKKER, J. H., and ONVLEE, P. C. (1955). *Ned. T. Geneesk.*, 99, 1414. 23 refs.

Comparative Study of the Sensitivity of VDRL and Meinicke Reaction. BHADRA, A. C. (1955). *Indian med. J.*, **49**, 148. 1 fig. 2 refs.

Relation between Serum Reactions for Syphilis and Immunization. (Beziehungen zwischen Luesseroreaktionen und Immunisierungen.) BÖCKELER, R., and MAURER, H. (1955). *Blut*, **1**, 121. 20 refs.

Technical Improvement for the More Rapid Extraction of Treponemata in the Nelson Test. (Eine methodische Verbesserung zur schnelleren Extraktion der Treponemen beim Nelsontest.) FEGELER, F., and KNAUER, I. (1955). *Zbl. Bakt., 1. Abt. Orig.*, **162**, 540. 4 refs.

Modification by Sodium Salicylate of the Serological Reactions of Syphilis. (Modifications apportées par le salicylate de sodium aux réactions serologiques de la syphilis.) BOUJNAH, A., and DELAUNAY, A. (1955). *Rev. Immunol. (Paris)*, **19**, 53. 1 ref.

First India Survey of Serological Tests for Syphilis. CHACKO, C. W., GAUB, W. H., and GOPALAN, K. N. (1955). *Indian J. vener. Dis.*, **21**, 1.

SYPHILIS (Pathology)

Contribution to the Histology and Pathogenesis of Tabes Dorsalis. (Contributo all'istopatologia e patogenesi della tabe.) FLORIS, V., and PANSINI, A. (1955). *Riv. Neurol.*, **25**, 1. 17 figs, 22 refs.

At the University Clinic for Nervous Diseases, Padua, the authors have examined in some detail the histological features of the spinal cord, spinal nerve roots, and meninges in six cases of tabes dorsalis. On their findings, which are described, they base the hypothesis that the infection first attacks epidural structures, and thence proceeds to affect the meninges and finally the cord itself. The paper is illustrated by a number of clear photomicrographs.

L. Michaelis

SYPHILIS (Experimental)

Erythromycin ("Ilotycin"), Treponemes, and Experimental Syphilis in the Rabbit. (Erythromycine (ilotycine), tréponèmes et syphilis expérimentale du Lapin.) DEROM, P., and VAN HOYDONCK, J. (1955). *Rev. belge Path.*, **24**, 199. 2 refs.

Further Research on Experimental Syphilis in the Mouse (Nouvelles recherches sur la syphilis expérimentale de la souris.) GASTINEL, P., VAISMAN, A., and DUNOYER, F. (1955). *Ann. Derm. Syph. (Paris)*, **82**, 140.

GONORRHOEA

Susceptibility of *Neisseria gonorrhoeae* to Eleven Antibiotics and Sulfadiazine. Comparison of Susceptibility of Recently Isolated Strains with Results Obtained in Previous Years in the Same Laboratory. DEL LOVE, B., and FINLAND, M. (1955). *Arch. intern. Med.*, **95**, 66. 1 fig., 39 refs.

The sensitivity of 108 strains of *Neisseria gonorrhoeae* to eleven antibiotics and to sulphadiazine was studied at the Thorndike Memorial Laboratory and Harvard Medical School, Boston. Penicillin was the most effective

of the agents tested and erythromycin, though considerably less active, came next; the remainder in order of sensitivity were oxytetracycline, tetracycline, chlortetracycline (aureomycin), chloramphenicol, carbomycin, streptomycin, neomycin, bacitracin, sulphadiazine, and polymixin B.

A comparison of these findings with those of a similar investigation carried out in 1949 did not reveal any significant change in the sensitivity of the organisms to penicillin. The authors state that any slight changes observed were well within the range of variability in the purity of the preparation used and the limits of experimental error in the method, which involved the inoculation of the organism on a series of agar plates containing doubling dilutions of the antibiotic. The percentage of strains resistant to sulphadiazine in a concentration of 100 µg. per ml. was 84 in 1949 compared with nineteen in the present investigation; this is attributed to marked decrease in the use of sulphonamides in the treatment of gonococcal infection.

John M. Talbot

Investigation of *Neisseria gonorrhoeae* by a Red Cell Sensitization Technique. CHANARIN, I. (1954). *J. Hyg. (Lond.)*, **52**, 425. 16 refs.

An extract prepared from freshly isolated strains of *Neisseria gonorrhoeae* was shown to sensitize sheep erythrocytes so that they were haemolysed by a homologous antiserum prepared in the rabbit. The author, working at the Central Pathological Laboratory, Durban, has investigated in detail the part played by the various components in the reaction; the techniques employed are fully described. Of the various factors concerned in the adsorption of the antigen by the erythrocytes, one was shown to be the strength, within limits, of the extract. Prolongation of the reaction beyond 30 min. had little effect, most of the sensitization occurring within that time. In a study of the effect of different temperatures it was shown that very little adsorption occurred at 4° C., the optimum temperature being 37° C. The presence of electrolytes was necessary for the reaction. It was found that all the antigen in the solution could be adsorbed by the erythrocytes even after repeated sensitization. Strains of *N. gonorrhoeae* which had undergone the "smooth to rough" (S-R) change were no longer capable of producing a sensitizing antigen. The antigen was shown to be heat-stable and is thought to be probably polysaccharide in nature.

Initially eighteen strains were examined, which by the mirror cross-absorption technique could be divided into two types, fifteen being of Type I and three of Type II; these types share a common antigen, and Type I has an additional antigen. Examination of 67 further strains showed that 59 were of Type I and eight of Type II, while eight strains of meningococcus examined were found to have an antigen identical with the gonococcal Type I. Of 28 strains of other neisseria, only one showed any cross-reaction with the gonococcal antiserum. The author also demonstrated that the erythrocyte-sensitizing antigen did not fix complement, but that another antigen was present in the extract which did. The application of these findings to human infection was felt to be outside

the scope of this study, but the author mentions that 30 per cent. of patients with simple gonococcal urethritis gave a positive gonococcal haemolysis test, thus suggesting that the sensitizing haptene does play some part in the process of gonococcal infection. In conclusion the author emphasizes the importance of the S-R change in any work on the antigens of *N. gonorrhoeae*.

[Recently Wilson (*J. Path. Bact.*, 1954, 68, 495; *Abstr. Wld Med.*, 1955, 17, 435) described experiments in which he identified four group antigens and four type-specific antigens in gonococci. He also discussed at length the S-R change and other changes in the agglutinability of the micro-organism.] R. F. Jennison

Should Credé's Prophylaxis be Changed? (Soll die Credé'sche Blennorrhoe-Propylaxe abgeändert werden?) WALCH, E. (1954). *Geburts. u. Frauenheilk.*, 14, 389.

The extensive literature on the question whether silver nitrate or penicillin is a better prophylactic for blennorrhoea is very well summarized and discussed. The author compared the results of prophylaxis with silver nitrate or with penicillin each in 100 newborn children and found a greater number (six) of non-specific conjunctivitis with penicillin than with silver nitrate (three). He concludes that penicillin is not a significantly better prophylactic, and that its use carries the risk of more resistant strains. At the present time silver nitrate seems to be the best, although not the ideal, prophylaxis.

W. Leydhecker

Ophthalmia Neonatorum. ORMSBY, H. L. (1955). *Canad. med. Ass. J.*, 72, 576. 5 tables, 13 refs.

Conjunctival infections and chemical reactions in 8,418 newborn infants were noted. The first 1,703 children were treated prophylactically with two drops of Sulmeffin (a solution of 0.5 per cent. sodium sulphathiazole and 0.5 per cent. sulphadiazine) in each eye following cleansing of the infant immediately after birth. The next 1,570 children received 10 per cent. sodium sulphacetamide to the conjunctival sac prophylactically. The next 3,125 children received 1 per cent. silver nitrate to the conjunctival sac, and the final 2,020 children had no treatment.

Chemical reaction in the conjunctival sac of a small percentage of the children was caused by 1 per cent. silver nitrate solution, but the incidence of staphylococcal, gonococcal, and inclusion conjunctivitis was low. When no prophylaxis was used there was a slight increase in the incidence of gonococcal conjunctivitis. The incidence of inclusion conjunctivitis was very similar to that when 1 per cent. silver nitrate was used; 1 per cent. silver nitrate has stood the test of time as an efficient prophylactic for gonococcal ophthalmia and has no harmful effects. [See also *Amer. J. Ophthalm.*, 1955, 39, 90.]

C. McCulloch

Ophthalmia Neonatorum. SIVASUBRAMANIAM, P. (1955). *J. Jaffna clin. Soc.*, 2, 88. 3 refs.

A general article, quoting recent cases, and emphasizing the need for prophylaxis with silver nitrate.

P. D. Trevor-Roper

Standardization of Diagnostic Methods for Gonococcal Infections. PARRINO, P. S., O'SHAUGHNESSY, E. J., and WHITE, J. D. (1955). *Amer. J. publ. Hlth*, 45, 457. 9 refs.

Ophthalmia Neonatorum. SMITH, C. A., and HALSE, L. (1955). *Publ. Hlth Rep. (Wash.)*, 70, 462. 20 refs.

NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS

Notes on the Treatment of Nongonococcal Urethritis in Males with Tetracycline. CLARKE, B. G., CHAIMSON, H., GOLDEN, H., and TASHIAN, H. N. (1955). *Bull. Tufts-New Engl. med. Cent.*, 1, 34. 5 refs.

Results are reported from the Boston Dispensary of the treatment with tetracycline of sixteen males suffering from non-gonococcal urethritis. The drug was given by mouth in doses of 250 mg. four times daily for 5 days. In all cases the urethral discharge disappeared within 1 to 5 days of the start of treatment and did not recur during the period of observation, which lasted from 1 to 3 weeks. No untoward reactions to the drug were observed.

The incubation period in these cases varied from 2 to 42 days. From cultures of the discharge made in thirteen cases *Staphylococcus albus* was isolated. Of ten strains of this organism tested, nine were sensitive to tetracycline *in vitro*, although the one patient with resistant organisms responded clinically. Five of six tetracycline-sensitive strains of *Staph. albus* were found to be resistant to sulphonamides.

A further six patients with a non-gonococcal urethral discharge associated with prostatitis were also treated with tetracycline. The urethral discharge ceased in all six cases, though two cases later relapsed owing to the emergence of organisms resistant to the antibiotic.

R. R. Willcox

Etiology of Nongonococcal (Nonspecific) Urethritis.

WILLCOX, R. R. (1955). *J. chron. Dis.*, 1, 381. 42 refs.

Writing from St. Mary's Hospital, London, the author points out that the present high incidence of non-specific urethritis and the lack of precise knowledge of its aetiology render it urgent that the causative organism should be identified without delay.

Among the possible pathogens which have been considered are bacteria, trichomonads, spirochaetes, pleuropneumonia-like organisms (PPLO), and viruses. He has found little difference in the bacterial flora in the urethra in treated and untreated cases, and in controls. *Trichomonas vaginalis* has been reported by various workers to be present in from 5 to 29 per cent. of cases, but the author feels that there is still insufficient evidence to incriminate *T. vaginalis* in the majority of cases, although the successful experimental inoculation of the male urethra with cultures of this organism in a small number of volunteers reported by Lanceley and McEntegart (*Lancet*, 1953, 1, 668; *Abstr. Wld Med.*, 1953, 14, 401) demands further research.

It has been suggested that spirochaetes similar in morphology to those found in the mouth may be of importance, as they are in abacterial pyuria, but an inquiry carried out by the author suggested that the practice of oral or anal coitus was no more frequent among patients with non-specific urethritis than in the general population. Much work has also been done recently on the relation of PPLO to non-specific urethritis, but these organisms have been found so often in healthy men and women that the author regards them as commensals.

The blue staining inclusion bodies and red granules well known in the epithelial cells in trachoma have also been found in scrapings from the urethra of patients with so-called inclusion blennorrhoea and non-specific urethritis. The author has therefore attempted to obtain additional evidence for a viral aetiology of non-specific urethritis by means of dermal and serological tests. In a series of skin tests with antigens of the lymphogranuloma-psittacosis-trachoma group of viruses negative results were obtained with the psittacosis antigen, but with "lygranum" antigen and cat-scratch antigen positive results were slightly more frequent in cases of non-specific urethritis than in controls. Complement-fixation tests for lymphogranuloma venereum and for enzootic abortion in ewes (due to a similar organism) gave no significant results. Giemsa-stained urethral scrapings from a large number of patients, their female consorts, and from controls were examined for virus inclusion bodies, elementary bodies, and PPLO. The author concludes that none of these bodies can be incriminated as the cause of non-specific urethritis. Finally, attempts to passage the virus or causal organism of non-specific urethritis into the brain or lungs of mice, subcutaneously into guinea-pigs, into the urethra, conjunctiva, or knee joints of baboons, or into embryonated hen's eggs were entirely unsuccessful. The cause of non-specific urethritis therefore still remains to be discovered.

V. E. Lloyd

Nonbacterial Regional Lymphadenitis ("Cat-scratch Fever"). An Evaluation of the Diagnostic Intradermal Test. MCGOVERN, J. J., KUNZ, L. J., and BLODGETT, F. M. (1955). *New Engl. J. Med.*, **252**, 166. 4 refs.

In an attempt to evaluate the use of skin-test antigens in the diagnosis of non-bacterial lymphadenitis ("cat-scratch fever") the authors carried out tests in eighteen clinical cases of the disease and in several groups of control subjects at the Massachusetts General Hospital, Boston. Three antigens were prepared from pus aspirated from lymph nodes in three cases and a 0.1-ml. dose was injected into the skin of the forearm of each subject tested. Within 10 min. a weal appeared which lasted 24 hrs in most cases, but this non-specific response had disappeared at 48 hrs. The reaction was considered to be positive if there was an indurated papule 4 mm. in diameter and a zone of erythema 1 cm. or more in diameter.

It was found that all the eighteen patients gave a positive reaction to one or more antigens. A positive

result was also obtained in four (10.5 per cent.) of 38 members of the families of these patients, in one out of 21 members of healthy families, in four (22.2 per cent.) of eighteen persons working in an animal hospital, and in one out of 22 members of the hospital staff. The higher ratio of positive reactions in the personnel of the animal hospital, although suggestive, might easily be due to chance in the numbers tested.

The authors conclude that the demonstration of positive reactions with skin-testing materials, as at present prepared, is of little value in the diagnosis of non-bacterial lymphadenitis in the absence of well-defined clinical signs and symptoms.

Thomas Anderson

Reiter's Syndrome. (In Dutch.) LINDEBOOM, G. A. (1954). *Geneesk. Gids*, **32**, 70. 3 refs.

This article, intended for the general practitioner, describes a case in a 23-year-old male with the complete triad. Aureomycin improved the fever.

J. ten Doesschate

Non-Specific Urethritis and Reiter's Disease. (In Dutch.) WENTHOLT, H. M. (1954). *Ned. T. Geneesk.*, **98**, 356. 27 refs.

Neurological Manifestations of Cat-scratch Disease. WEINSTEIN, L., and MEADE, R. H. (1955). *Amer. J. med. Sci.*, **229**, 500. 14 refs.

Topical Use of Oxytetracycline in the Treatment of Non-Specific Urethritis. (Uso topico della Terramicina nel trattamento delle uretriti aspecifiche.) FERULANO, O., and REDA, T. (1955). *G. ital. Chir.*, **11**, 211. 41 refs.

CHEMOTHERAPY

Variations in the Antimicrobial Activity of the Tetracyclines. II. REEDY, R. J., RANDALL, W. A., and WELCH, H. (1955). *Antibiot. and Chemother.*, **5**, 115. 6 refs.

This is a continuation of an earlier investigation carried out at the U.S. Department of Health, Washington, D.C. (*Antibiot. and Chemother.*, 1954, **4**, 741; *Abstr. Wld Med.*, 1955, **17**, 95) into the activity *in vitro* of chlortetracycline (aureomycin), oxytetracycline, and tetracycline against a number of Gram-negative and Gram-positive organisms.

Considerable differences in sensitivity to the three antibiotics were encountered in strains of *Staphylococcus*, *Aerobacter*, *Klebsiella*, *Escherichia*, *Salmonella*, *Shigella*, *Proteus*, and *Pseudomonas*. Generally, chlortetracycline was the most effective against Gram-positive cocci and tetracycline the most effective against Gram-negative bacilli. At some concentrations, however, oxytetracycline was more active than the other two against certain strains of organisms in both groups.

The results indicate that these three antibiotics do not possess "equal antibacterial activity" and that laboratory sensitivity tests are necessary to determine which will be the most effective in any particular infection. The authors state that all three are equally effective

clinically against highly sensitive organisms—including *Haemophilus influenzae*, β -haemolytic streptococci, pneumococci, gonococci, and perhaps meningococci—and in diseases due to certain large viruses and to rickettsiae. In the treatment of meningococcal meningitis tetracycline is of special value because it enters the cerebrospinal fluid more readily than chlortetracycline or oxytetracycline.

Derek R. Wood

Changing Patterns of Resistance of Certain Common Pathogenic Bacteria to Antimicrobial Agents. FINLAND, M. (1955). *New Engl. J. Med.*, **252**, 570. 9 figs, 18 refs.

From 1949 to 1954 inclusive a systematic study was undertaken at the Thorndike Memorial Laboratory, Boston, of the sensitivity to chemotherapy of a number of strains of pathogenic bacteria, and in the present paper the variations in drug resistance observed during this period are reported.

There was no important change in resistance to the antibiotics then available of Group-A haemolytic streptococci, *Haemophilus influenzae*, or strains of meningococcus, gonococcus, and *Proteus*. Strains of gonococcus isolated in 1954 were considerably more sensitive to sulphadiazine than those isolated in 1949, and this is attributed to the fact that penicillin had replaced sulphonamides in the treatment of gonococcal infections.

Strains of *Staphylococcus aureus* collected and tested at various times over a period of 10 years showed not only a progressive increase in the proportion which were resistant to penicillin, but also an increase in the degree of resistance to the antibiotic. About a quarter of the most recently isolated strains were moderately resistant to chlortetracycline; even in the first series of strains tested more than a quarter were highly resistant to oxytetracycline, which was assumed to be the result of cross-resistance against aureomycin. None of the staphylococcal strains exhibited either a moderate or a high degree of resistance to chloramphenicol. Strains of *Pseudomonas* showed a definite increase in resistance to streptomycin and to neomycin and a slight increase in resistance to the broad-spectrum antibiotics.

The author states that most of the changes appeared to be directly correlated with the extensive use of the particular agent concerned, but some could only be explained on the basis of cross-resistance from other antibiotics.

E. G. Rees

Emergence of Antibiotic-resistant Gram-negative Bacilli. SANDFORD, J. P., FAVOUR, C. B., and MAO, F. H. (1955). *J. Lab. clin. Med.*, **45**, 540. 11 refs.

At the Peter Bent Brigham Hospital, Boston, the sensitivity to antibiotics of strains of recently isolated Gram-negative bacilli causing genito-urinary infections was compared with that of similar strains isolated before 1946 and maintained in a lyophilized state in the American Type Culture Collection. It was shown that lyophilization in no way affected the antibiotic sensitivity of the organisms, which included *Aerobacter aerogenes*, various species of *Proteus*, *Escherichia coli*, *Pseudomonas aeruginosa*, and miscellaneous coliform bacilli. They were cultured for 18 hrs in broth containing concentrations

of streptomycin, chloramphenicol, chlortetracycline (aureomycin), or oxytetracycline ranging from 2 μ g. to 32 μ g. per ml. The lowest concentration causing macroscopic inhibition of growth was regarded as the "sensitivity level", and strains not inhibited by 32 μ g. per ml. were considered to be resistant. All species showed an increased resistance to streptomycin, and *Aerobacter aerogenes* and strains of *Proteus* exhibited a significantly increased resistance to chlortetracycline and oxytetracycline. However, there did not appear to be any change in the number of strains which were sensitive to chloramphenicol.

E. G. Rees

PUBLIC HEALTH AND SOCIAL ASPECTS

Further Contributions to the Existence of an Antigenic Affinity between the Agents of Trachoma and those of Lymphogranuloma Venereum and Psittacosis. (Ulteriori contributi sull'esistenza di affinità antigeniche fra gli agenti del tracoma e quelli del linfogranuloma venereo-psittacosi.) BABUDIERI, B., BIETTI, G. B., and PANNARALE, M. R. (1954). *Boll. Soc. ital. Biol. sper.*, **30**, 1348. 5 refs.

The serum of patients with trachoma gave a positive reaction with the ornithosis-psittacosis antigens only four times out of 21. It was thought that the level of trachoma antibodies in the serum might be very low and a trachoma antigen was prepared from conjunctival scrapings. This gave a positive reaction in nine out of nine cases with trachoma serum, four out of four cases of lymphogranuloma serum, and thirteen out of seventeen cases of psittacosis.

D. Maurice

Venereal Disease among Teen-agers. Its Relationship to Juvenile Delinquency. DONOHUE, J. F., GLEESON, G. A., JENKINS, K. H., and PRICE, E. V. (1955). *Publ. Hlth Rep. (Wash.)*, **70**, 453. 11 figs, 3 refs.

This paper gives the results of a statistical analysis of special reports submitted to the Venereal Disease Program of the U.S. Public Health Service by State and city health departments giving the age incidence among cases of syphilis and gonorrhoea reported in the year 1953.

The occurrence of infectious venereal disease among persons less than 20 years of age in the various States and in the country as a whole is illustrated in tables and figures, and the relation between the incidence of venereal disease in this age group and certain socioeconomic factors is shown in scatter diagrams.

A significant positive association is shown to exist between the incidence of venereal disease in persons under 20 and the number of defendants in criminal proceedings for Federal offences in the same age group, promiscuity as indicated by the illegitimacy ratio for all live births, proportion of reported foetal deaths where the mother's age was less than 20, and the proportion of low-income families in the general population. A significant association is shown to exist between the incidence of juvenile venereal disease and the percentage school enrolment in the same age group.

In discussing these findings the authors point out that they are open to several interpretations. It is arguable that it is only natural that sexually active adolescents would account for a substantial proportion of all venereal infections. But "a youngster infected with a venereal disease has obviously deviated from the accepted pattern of approved social behaviour. In this sense, venereal disease itself might be considered a manifestation of the broad problem of juvenile delinquency".

Benjamin Schwartz

Congenital Syphilis. Medico-Social Problems as Seen in the Provincial Child Welfare Institutes in Italy. (La sifilide congenita. I problemi medico-sociali nella sifilide congenita visti attraverso gli I.P.A.I.) VITETTI, G., and MENICHELLA, V. (1955). *Pediatrics (Napoli)*, 63, 345. 3 figs.

Wanted, a National Programme for the Control of Venereal Diseases. RAJAM, R. V. (1955). *Antiseptic*, 52, 413.

Venereal Disease Statistics. (Zur Geschlechtskrankens-statistik.) RACHOLD, R. (1955). *Öff. GesundhDienst.*, 17, 41.

Medical Evaluation of a System of Legalized Prostitution LENTINO, W. (1955). *J. Amer. med. Ass.*, 158, 20. 3 refs.

Tetracycline (Tetracycl) in the Treatment of Donovanosis. MARMELL, M., and PRIGOT, A. (1955). *Harlem Hosp. Bull.*, 8, 9. 4 figs, 4 refs.

Etymology of the Term "Syphilis". SPITZER, L. (1955). *Bull. Hist. Med.*, 29, 269.

Serological Study of Yaws in Java. HUAN-YING, LI, and SOEBEKTI, R. (1955). *Bull. Wld Hlth Org.*, 12, 905. 11 figs.

Decline and Fall of Syphilis in New York State. III. Early Acquired Syphilis. VOUGHT, R. L., MELLO, L. DE, and LOCKE, F. B. (1955). *J. chron. Dis.*, 2, 303. 3 figs, 3 refs.

MISCELLANEOUS

Common Problem of Venereal Warts. GLENN, J. F. (1955). *U.S. armed Forces med. J.*, 6, 983. 12 refs.